

Application No. : 10/635,593  
Filed : August 5, 2003

IN THE CLAIMS

Please amend Claims 2, 3, 5, 6, 9-17, 21 and 25-34, and add new Claims 35-45 follows:

- 5
1. (Cancelled)
  2. (Currently amended) A ~~machine readable computer readable storage~~ medium comprising [[a]] data ~~structure~~ for arbitrating on a high performance serial bus, said data ~~structure adapted to be stored in a computer memory~~ and comprising a symbol generated by a border node comprising an indication therein for indicating that a PHY or link layer from a Legacy cloud wishes to arbitrate within a beta cloud.
  - 10 3. (Currently amended) A ~~machine readable data transmission computer readable storage medium~~ comprising [[a]] data ~~structure~~ for arbitrating on a high performance serial bus, said data ~~structure adapted to being stored in a computer memory~~, comprising a symbol generated by a border node comprising an indication therein for indicating that a device or link from a Legacy cloud wishes to arbitrate within a beta cloud.
  - 15 4. (Cancelled)
  5. (Currently amended) In a full-duplex communications system comprising ~~a plurality of one or more~~ border nodes ~~and a non-border node~~ within a beta cloud, a method for issuing gap tokens within a beta cloud comprising:
    - selecting one border ~~device node~~ among said ~~plurality of one or more border devices~~ nodes to be a BOSS node;
    - detecting a period of idle bus activity; and
    - having said BOSS node generate a gap token upon said detection of said period of idle bus activity,  
25 wherein said non-border node does not comprise a gap timer.
  - 20 6. (Currently amended) In a full-duplex communications system ~~having comprising a plurality of one or more~~ border nodes ~~and a non-border node~~ within a beta cloud, ~~and~~ one of the border nodes being a senior border node, a method for issuing gap tokens within a beta cloud comprising giving exclusive responsibility for issuing gap tokens in the beta cloud to the senior border node, wherein said non-border node does not comprise a gap timer.
  - 25 7. (Cancelled)

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8. (Previously presented) In a hybrid communications system comprising a plurality of nodes with at least one beta node comprising a senior port and at least one junior port, each node in said plurality of nodes comprising a port; a method for returning control to a senior border node comprising:

- 5        determining by the beta node whether an end of subaction has been reached;  
          having said beta node send a DATA-END out of said beta node's senior port and out of each of said beta node's junior ports if an end of subaction has not been reached;  
          if a subaction has been reached, further determining by said beta node whether there are any in-phase requests to grant from a requesting port, wherein said requesting port is a port from  
10      a node in said plurality of nodes other than said beta node;  
          if there are any in-phase requests, sending by said beta node a GRANT to said requesting port, and sending a DATA-NUL to all other ports of nodes other than said beta node;  
          if there are no in-phase requests; further determining by said beta node whether said beta node is a senior border node;  
15      having said beta node send a DATA-END out of said beta node's senior port and out of each of said beta node's junior ports if said beta node is a senior border node; and  
          sending a GRANT out of said beta node's senior port and sending a DATA-END out of each of said beta node's junior ports if said beta node is not a senior border node.
9. (Currently amended) The ~~machine readable computer readable storage~~ medium of  
20      Claim 2, wherein said symbol comprises a legacy request symbol.
10. (Currently amended) The ~~machine readable computer readable storage~~ medium of  
Claim 9, wherein said legacy request symbol comprises a priority.
11. (Currently amended) The ~~machine readable computer readable storage~~ medium of  
Claim 10, wherein said priority is higher than that of any asynchronous and isochronous requests  
25      present on said beta cloud.
12. (Currently amended) The ~~machine readable computer readable storage~~ medium of  
Claim 3, wherein said symbol comprises a legacy request symbol.
13. (Currently amended) The ~~machine readable computer readable storage~~ medium of  
Claim 12, wherein said legacy request symbol comprises a priority.

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14. (Currently amended) The ~~machine readable computer readable storage~~ medium of Claim 13, wherein said priority is higher than of any asynchronous and isochronous requests present on said beta cloud.

15. (Currently amended) In a communication system having a plurality of nodes and having at least one hybrid bus comprising a first serialized protocol and a second serialized protocol, a method for issuing [[a]] ~~an~~ inactivity-related communication to one of said plurality of nodes, said method comprising:

timing a period of idle bus activity in at least a portion of said hybrid bus operating according to said first serialized protocol; and

10           generating an inactivity-related communication in one or more border nodes corresponding to said period of idle bus activity, ~~and transferring said gap related communication to said one node wherein said one or more border nodes retain exclusive responsibility for generating said inactivity-related communication.~~

16. (Currently amended)       The method of Claim 15, wherein said first serialized protocol comprises an IEEE-1394a compliant protocol, and said second protocol comprises an IEEE-1394b compliant protocol, ~~and said one node comprises a border node.~~

17. (Currently amended)       The method of Claim 16, wherein said act of generating is performed exclusively by a senior border node within said system.

18. (Previously presented)    The method of Claim 15, wherein said inactivity related communication comprises a gap token.

19. (Previously presented) A control method for use by a beta node of a hybrid communication system comprising a plurality of nodes, each of said nodes comprising a port, said beta node comprising a senior port and at least one junior port, wherein said control method comprises:

25           issuing a first signal from said beta node's senior port and each of said beta node's junior ports if an end of a subaction has not been reached;

            if an end of a subaction has been reached, determining whether a port of any node other than said beta node has issued an in-phase request; and

30           if an in-phase request has issued from said port of any other node, sending a second signal to said issuing port, and sending a third signal to all other ports;

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if there are no in-phase requests, determining whether said beta node is a senior border node;

sending said first signal out of said beta node's senior port and out of each of said beta node's junior ports if said beta node is a senior border node; and

5 sending said second signal out of said beta node's senior port and sending a said first signal out of each of said beta nodes junior ports if said beta node is not a senior border node.

20. (Previously presented) A method for use by a senior border node of a hybrid communication system comprising a plurality of nodes, each of said nodes comprising a port, said senior border node comprising a senior port and at least one junior port, wherein said method comprises:

issuing a first signal from said senior border node's senior port and each of said senior border node's junior ports if an end of a subaction has not been reached;

if an end of a subaction has been reached, determining whether a port of any node other than said senior border node has communicated an in-phase request; and

15 if there are no in-phase requests, sending a first signal out of said senior border node's senior port and out of each of said senior node's junior ports.

21. (Currently amended) In a hybrid communications system having a plurality of nodes including a senior border node, and ~~at least one a~~ device having at least one senior port and at least one and junior port, a method for returning control to said senior border node comprising:

20 identifying an end of an asynchronous action condition, said condition further comprising a condition where no in-phase arbitration requests are pending; and

determining whether said device is a senior border node and if so, sending a first signal out all of said device's senior and junior ports, and if not:

25 sending a second signal out of said device's at least one senior port; and

sending said first signal out of said device's at least one junior port.

22. (Previously presented) The method of Claim 21, wherein said second signal comprises a signal indicating control is to be granted to a node communicating with said at least one senior port, and said first signal comprises a signal indicating that control is not to be granted to a node communicating with said at least one junior port.

30 23. (Previously presented) The method of Claim 21, wherein said device comprises a beta device.

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24. (Previously presented) The method of Claim 22, wherein said hybrid system comprises a hybrid IEEE-1394a/IEEE 1394b system.

25. (Currently amended) A ~~machine readable~~ computer readable storage medium comprising [[a]] data ~~structure~~ for arbitrating on a high performance serial bus, said serial bus comprising first and second serialized protocols, said data ~~structure~~ adapted to be stored in a computer memory and comprising at least one communication generated by a border node comprising an indication therein for indicating that a physical layer or link layer from a network cluster operating according to said first protocol wishes to arbitrate within a cluster operating according to said second protocol.

10 26. (Currently amended) The ~~machine readable~~ computer readable storage medium of Claim 25, wherein said first protocol comprises the IEEE-1394a protocol, and said second protocol comprises the IEEE-1394b protocol.

27. (Currently amended) The ~~machine readable~~ computer readable storage medium of Claim 25, wherein said at least one communication comprises a legacy request symbol.

15 28. (Currently amended) The ~~machine readable~~ computer readable storage medium of Claim 27, wherein said legacy request symbol comprises a priority.

29. (Currently amended) The ~~machine readable~~ computer readable storage medium of Claim 28, wherein said priority is higher than that of any asynchronous and isochronous requests present on said network cluster operating according to said second protocol.

20 30. (Currently amended) A ~~machine readable data transmission~~ computer readable storage medium comprising [[a]] data ~~structure~~ for arbitrating on a high performance serial bus, said data ~~structure~~ adapted to being stored in a computer memory, comprising at least one communication generated by a border node comprising an indication therein for indicating that a device or link from a network cluster operating according to said first protocol wishes to arbitrate within a network cluster operating according to said second protocol.

25 31. (Currently amended) The ~~machine readable~~ computer readable storage medium of Claim 30, wherein said first protocol comprises the IEEE-1394a protocol, and said second protocol comprises the IEEE-1394b protocol.

30 32. (Currently amended) ~~machine readable~~ computer readable storage medium of Claim 30, wherein said at least one communication comprises a legacy request symbol.

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33. (Currently amended) ~~machine readable computer readable storage~~ medium of Claim 32, wherein said legacy request symbol comprises a priority.

34. (Currently amended) The ~~machine readable computer readable storage~~ medium of Claim 33, wherein said priority is higher than that of any asynchronous and isochronous requests present on said network cluster operating according to said second protocol.

35. (New) In a hybrid bus comprising a first set of nodes adapted to utilize a first serial bus protocol, and a second set of nodes adapted to utilize a second serial bus protocol, wherein said first and second sets of nodes are adapted to being connected at a border node; a method comprising:

10 determining, using only the border node, a period of idle bus activity in at least a portion of said hybrid bus operating according to the first serial bus protocol; and

generating via the border node an inactivity-related communication corresponding to said period of idle bus activity.

36. (New) The method of Claim 35, wherein the period of idle bus activity comprises a 15 subaction\_gap.

37. (New) The method of Claim 36, wherein the inactivity-related communication comprises an asynchronous start command.

38. (New) The method of Claim 35, wherein the period of idle bus activity comprises a gap relating to a reset event.

20 39. (New) The method of Claim 38, wherein the inactivity-related communication comprises an arbitration reset communication.

40. (New) The method of Claim 35, wherein the inactivity-related communication comprises an arbitration reset communication.

41. (New) The method of Claim 35, wherein the second serial bus protocol comprises 25 the IEEE-1394b standard.

42. (New) A method for use by a senior border node of a hybrid communication system comprising a plurality of nodes, each of said nodes comprising a port, said senior border node comprising a senior port and at least one junior port, wherein said method comprises:

issuing a first signal from at least one of said senior border node's ports if an end of an 30 action has not been reached;

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if an end of an action has been reached, determining whether a port of any node other than said senior border node has communicated an in-phase request; and

if there are no in-phase requests, sending a first signal out of at least one of said senior border node's senior or junior ports.

5        43. (New) The method of Claim 42, wherein said sending a first signal comprises sending a data end signal.

44. (New) The method of Claim 42, wherein said hybrid communication system comprises a first high-speed serialized protocol and a second high-speed serialized protocol.

10      45. (New) The method of Claim 44, wherein said first serialized protocol comprises an IEEE-1394a compliant protocol, and said second protocol comprises an IEEE-1394b compliant protocol.